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| 10/661,154      | 09/12/2003  | Masataka Innan       | 16869K-093800US     | 6807             |

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| EXAMINER |
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SORRELL, ERON J

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| ART UNIT | PAPER NUMBER |
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2182

DATE MAILED: 02/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/661,154

Applicant(s)

INNAN ET AL.

Examiner

Eron J. Sorrell

Art Unit

2182

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 5-7 and 20-32 is/are pending in the application.
- 4a) Of the above claim(s) 21-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5-7 and 20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/17/05, 12/7/05</u> | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Allowable Subject Matter***

1. The indicated allowability of claims 5,6, and 20 is withdrawn in view of the newly discovered reference(s) to Bergsten (U.S. Patent No. 6,363,462), DeKoning et al. (U.S. Patent No. 6,675,268) and Fibre Channel Overview. Rejections based on the newly cited reference(s) follow.

***Election/Restrictions***

2. Newly submitted claims 21-32 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Originally filed claims 5,6,7, and 20 are directed toward a system and method for I/O command processing comprising first and second storage controllers wherein the first controller receives a command and determines if the command should be handled by the second controller, and if so, transfers the command to the second controller. This type of arrangement would be classified in 710/5. Newly submitted claims 21-32 are directed to a network switch and method for operating comprising limitation of receiving packets at an input port of the switch and determining from information in the packet, the output port of the switch the data should be sent to. This type of arrangement would be

Art Unit: 2182

classified in 710/316. The two identified groups of claims are related as subcombinations usable together. The combination is shown in Figure 1 of the instant application. The first subcombination (claims 5,6,7, and 20) can be used for migrating data from first storage device to a second storage device, without host intervention.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 21-32 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Art Unit: 2182

4. Claims 5,6,7, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bergsten in view of Fibre Channel Overview (hereinafter "FCO").

5. Referring to claim 5, Bergsten teaches a method for controlling a storage system (see figure 1) including a host computer (see item 2-1 in figure 1) a first storage controller connected communicably to said host computer (see item 3-1 in figure 1), for receiving a data frame transmitted from said host computer and executing data input to and data output from a first storage device in response to a data input/output request described in said data frame (see paragraph bridging columns 4 and 5); and a second storage controller connected communicably to said first storage controller (see item 3-2 in figure 1), the method comprising:

relaying by said first storage controller, upon receipt of said data frame transmitted from said host computer, said data frame to said second storage controller in response to information described in said data frame (see paragraph bridging columns 4 and 5), wherein said data frame is a data frame conforming to Fiber Channel Protocol (see 41-59 of column 4), and wherein said relaying is conducted by a Fiber Channel switch included in said first storage controller (see paragraph

Art Unit: 2182

bridging columns 7 and 8, note that while a switch is not explicitly discloses OS 20 controls data flow through the controller providing functionality of a switch), and wherein said first storage controller stores access limit information indicating permission/rejection of an access of a Fiber Channel port of the source to said Fiber Channel port of the destination or to said storage device of the destination (see items 605 and 606 in figure 6), wherein by said first storage controller, when receiving said data frame from said host computer, referring to said access limit information to check whether said Fiber Channel port of the source of said data frame is permitted to make access to said Fiber Channel port of the destination or to said storage device of the destination (see paragraph bridging columns 8 and 9); and relaying by said first storage controller said data frame to said second storage controller only when said access is permitted (see paragraph bridging columns 8 and 9).

Bergsten fails to explicitly set forth the limitation that data frame includes therein described as said information, at least one of: information for specifying a Fiber Channel port of the source of said data frame; information for specifying a Fiber Channel port of the destination of said data frame; and information for specifying said storage devices.

FOC discloses a standard format for Fibre Channel frames including at least one of: information for specifying a Fiber Channel port of the source of said data frame; information for specifying a Fiber Channel port of the destination of said data frame; and information for specifying said storage devices (see section 5.2 and figure 4).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the method of Bergsten with the above teachings of FOC in order to properly transfer data according to the Fibre Channel Protocol as intended by Bergsten (see lines 17-29 of column 6).

6. Claims 6,7, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bergsten in view of FOC as applied to claim 5 above, and further in view of DeKoning et al. (U.S. Patent No. 6,6752,68).

7. Referring to method claim 6 and system claim 20, Bergsten teaches a method for controlling a storage system (see figure 1) including a host computer (see item 2-1 in figure 1) a first storage controller connected communicably to said host computer (see item 3-1 in figure 1), for receiving a data frame transmitted from said host computer and executing data input to

Art Unit: 2182

and data output from a first storage device in response to a data input/output request described in said data frame (see paragraph bridging columns 4 and 5); and a second storage controller connected communicably to said first storage controller (see item 3-2 in figure 1), the method comprising:

relaying by said first storage controller, upon receipt of said data frame transmitted from said host computer, said data frame to said second storage controller in response to information described in said data frame (see paragraph bridging columns 4 and 5), wherein said data frame is a data frame conforming to Fiber Channel Protocol (see 41-59 of column 4), and wherein said relaying is conducted by a Fiber Channel switch included in said first storage controller (see paragraph bridging columns 7 and 8, note that while a switch is not explicitly discloses OS 20 controls data flow through the controller providing functionality of a switch), and wherein said first storage controller stores access limit information indicating permission/rejection of an access of a Fiber Channel port of the source to said Fiber Channel port of the destination or to said storage device of the destination (see items 605 and 606 in figure 6).

Bergsten fails to teach Bergsten fails to explicitly set forth the limitation that data frame includes therein described



Art Unit: 2182

as said information, at least one of: information for specifying a Fiber Channel port of the source of said data frame; information for specifying a Fiber Channel port of the destination of said data frame; and information for specifying said storage devices and further fails to teach the first storage controller stores information indicating priority of a data input/output process corresponding to said data frame, by relating to a combination of a Fiber Channel port of the source and a Fiber Channel port of the destination, wherein by said first storage controller, when receiving said data frame from said host computer, executing a data input/output process for said storage device connected to said port of the destination of said data frame, in conformity with said information indicating said priority.

FOC discloses a standard format for Fibre Channel frames including at least one of: information for specifying a Fiber Channel port of the source of said data frame; information for specifying a Fiber Channel port of the destination of said data frame; and information for specifying said storage devices (see section 5.2 and figure 4).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the method of Bergsten with the above teachings of FOC in order to

Art Unit: 2182

properly transfer data according to the Fibre Channel Protocol as intended by Bergsten (see lines 17-29 of column 6).

DeKoning teaches, in an analogous system, the storage controller storing information indicating priority of a data input/output process corresponding to said data frame (see paragraph bridging columns 8 and 9), by relating to a combination of a Fiber Channel port of the source and a Fiber Channel port of the destination, wherein by said first storage controller, when receiving said data frame from said host computer (see paragraph bridging columns 8 and 9), executing a data input/output process for said storage device connected to said port of the destination of said data frame, in conformity with said information indicating said priority (see lines 9-30 of column 9).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the combination of Bergsten and FOC with the above teachings of DeKoning. One of ordinary skill in the art would have been motivated to make such modification in order to arbitrate access to storage devices as suggested by DeKoning (see lines 11-26 of column 4).

Art Unit: 2182

8. Referring to claim 7, DeKoning teaches the information indicating priority is information indicative of timing to execute the data input/output process for the storage device (see lines 44-60 of column 7).

### ***Response to Arguments***

9. Applicant's arguments with respect to claims 5,6,7, and 20 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eron J. Sorrell whose telephone number is 571 272-4160. The examiner can normally be reached on Monday-Friday 8:00AM - 4:30PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Huynh can be reached on 571-272-4147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2182

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EJS

January 31, 2006

  
**KIM HUYNH**  
**SUPERVISORY PATENT EXAMINER**  
2/3/26